INDIANA DEPARTMENT OF TRANSPORTATION

STANDARDS COMMITTEE MEETING

Driving Indiana's Economic Growth

APPROVED

February 26, 2008

MEMORANDUM

TO: Standards Committee

FROM: Mike Milligan, Secretary

RE: Minutes for the February 21, 2008 Standards Committee Meeting

The Standards Committee meeting was called to order by the Chairman at 9:00 a.m. on February 21, 2008 in the N755 Bay Window Conference Room. The meeting was adjourned at 12:30 p.m.

The following members were in attendance:

Mark Miller, Chairman	Dave Andrewski, Pvmt. Engineering
Dennis Kuchler, State Constr. Engr.	Bob Cales, Contract Admin.
Ron Heustis, Constr. Mgmt.	John Wright, Roadway Services
Larry Rust, Traffic Control	Anne Rearick, Structural Services
Ron Walker, Materials Mgmt.	Jim Keefer, Fort Wayne Dist.

Also in attendance were the following:

Mike Milligan, Secretary	David Unkefer, FHWA
Jim Reilman, INDOT	Tom Rueschhoff, INDOT
Tony Uremovich, INDOT	Prakash Patel, INDOT
Tony Scott, LaPorte Dist.	Paul Berebitsky, ICA

Old Business

Item No.	Sponsor	Page No.
Item 18-13 Standard Drawings Action:	Mr. Wright 614-RRGC-01 thru 05 Withdrawn	4
Item 18-14 614 Action:	Mr. Wright ~~CONCRETE~~ HEADERS Withdrawn	5
Item 08-5-2 718 Action:	Mr. Keefer UNDERDRAINS Passed as revised	8

New Business

Item 08-7-1	Mr. Keefer	13
Standard Drawing	718-UNDR-01	
Action:	Passed as revised	
Item 08-7-2	Mr. Kuchler	15
619	PAINTING BRIDGE STEEL	
Action:	Withdrawn	
Item 08-7-3	Mr. Kuchler	34
702.10	Pumping Concrete	
702.13(e)2	Permanent	
702.20(a)	General Requirements	
702.27	Method of Measurement	
702.28	Basis of Payment	
Action:	Withdrawn	
Item 08-7-4	Mr. Kuchler	37
704.01	Description	
704.02	Materials	
704.04	Placing Reinforcement and Concrete	
704.05	Finishing Concrete	
704.06	Curing	
704.07	Method of Measurement	
704.08	Basis of Payment	
Action:	Withdrawn	
Item 08-7-5	Mr. Kuchler	40
709.05(a)	General Requirements	
Action:	Withdrawn	
Item 08-7-6	Mr. Kuchler	41
Standard Drawings	715-DDEX-01 thru 03	
Action:	Withdrawn	
Item 08-7-7	Mr. Kuchler	42
715.02	Materials	
715.02*(l)*	*Drain Extensions*	
715.02*(m)*	*Cast Iron Soil Pipe*	
715.10	Pipe End Sections, Anchors, Grated Box End Sections, and Safety Metal End Sections	
715.13	Method of Measurement	
715.14	Basis of Payment	
Action:	Withdrawn	
Item 08-7-8	Mr. Heustis	45
801.03	General Requirements	
Action:	Passed as submitted	
Item 08-7-9	Mr. Wright	48
920.01(g)	Shop Drawings	
Action:	Passed as revised	
Item 08-7-10	Mr. Keefer	49
715.14	Basis of Payment	
Action:	Passed as developed at meeting	

General Points of Discussion

Mark Miller, Committee Chair, announced that INDOT Executive Staff has asked to review any new policies or policy revisions before they are enacted. Executive Staff will review Standards Committee agendas. Gary Mroczka, Production Management Director, will submit design policy changes or technical advisories for review.

Mr. Miller emphasized that the Standards Committee function is to provide guidance and focus on concepts and allow details to be worked out by subcommittees before submission of agenda items.

Mr. Miller reminded attendees that comments or corrections to meeting minutes need to be returned to the Office of Construction Technical Support in a timely manner. When minutes are sent out, the expected date of return is included in the correspondence. Ideally, comments should be returned before the next month's agenda is released. Mr. Miller also stated that agenda items should be distributed to the members one month in advance of the meeting date.

David Andrewski requested that the committee review and approve the minutes prior to publication. Draft minutes will be distributed to the members; comments received and corrected minutes distributed prior to the next meeting. The corrected minutes will be reviewed and approved at the next meeting and the approved minutes will be posted to the website.

Although Agenda Item 08-6-5 was passed at the January 2008 Standards Committee Meeting, Anne Rearick wanted to ensure that there was no ambiguity or doubt about the Standards Committee's approval of INDOT use of the AASHTO LRFD Bridge Design Specifications, 4th Edition.

Ms. Rearick made a motion that the Standards Committee "approve AASHTO LRFD Bridge Design Specifications, 4th Edition for use." Robert Cales seconded the motion. The motion carried unanimously.

cc: Committee Members (11)
FHWA (1)

Item No. 18-13
Mr. Wright
Date: 02/21/08

PROPOSED NEW STANDARD DRAWINGS

614-RRGC-01, Railroad Crossing Details, HMA Header
614-RRGC-02, Railroad Crossing Details, RC Header
614-RRGC-03, Railroad Crossing Details, HMA Inter-Track Header
614-RRGC-04, Railroad Crossing Details, RC Inter-Track Header
614-RRGC-05, Railroad Crossing Details, Crown-Out Diagram

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision
Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

See Above

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 614, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 614 – ~~CONCRETE~~ HEADERS

614.01 Description

This work shall consist of the construction or reconstruction of ~~PCC~~ headers adjacent to railroad tracks~~, bridges, and similar locations~~ in accordance with 105.03.

MATERIALS

614.02 Materials

Materials shall be in accordance with the following:

Concrete, *Class C* 702
Curing Materials *912.01*
Dense Graded Subbase *302*
HMA *402.02*
Reinforcing Steel, *Epoxy Coated* ..... 910.01*(b)9*

~~If the header is adjacent to cement concrete base or pavement, the header concrete shall be the same composition as that of the base or pavement header constructed monolithic with the base or pavement. If the adjacent base or pavement is thickened, that portion forming the thickening shall be considered as part of the header.~~

~~If the header is adjacent to asphalt pavement, the concrete shall be class A in accordance with 702 using class AP coarse aggregate.~~

CONSTRUCTION REQUIREMENTS

614.03 *General*

Construction of headers shall not begin until after the railroad has completed its work. The railroad's work shall not be damaged. The elevation of the headers shall match the elevation of the portion constructed by the railroad. Terminal joints shall be constructed in accordance with 503.

~~614.03~~ *614.04* PCC Header*s*

Construction shall be in accordance with the applicable ~~provisions of 702~~ *requirements of 302, 609,* and ~~with~~ these requirements.

Welding shall be in accordance with 711.32.

~~Headers at railroad crossings shall be as shown on the plans.~~

614.05 ~~Method of Measurement~~ *HMA Headers*

Construction of HMA headers shall be in accordance with 402.

~~614.06 Reconstructed Cement Concrete Header~~

~~This work shall be in accordance with the plans. Round plug welds or rectangular shaped plug welds may be used to weld the steel angle to the existing steel edge protection. Round plug welds shall be a minimum of 1 in. (25 mm) diameter.~~

~~Welding shall be in accordance with 711.32.~~

~~614.05~~ *614.06* Method of Measurement

~~Cement~~ *Portland cement* concrete header ~~and reconstructed cement concrete header~~ will be measured by the ~~linear foot (meter)~~ *square yard (square meter). HMA surface, intermediate, and base will be measured by the ton (megagram) in accordance with 402.19. Dense graded subbase will be measured by the cubic yard (cubic meter) in accordance with 302.08. Terminal joints will be measured by the linear foot (meter) in accordance with 503.07.*

~~614.06~~ *614.07* Basis of Payment

~~The accepted quantities of this work~~ *Portland cement concrete headers* will be paid for at the contract unit price per ~~linear foot (meter)~~ *square yard (square meter)* for header, ~~cement concrete, of the type specified, or header, cement concrete, reconstruct, *PCC* complete~~ in place. *HMA surface, intermediate, and base will be paid for in accordance with 402.20. Dense graded subbase will be paid for in accordance with 302.09. Terminal joints will be paid for in accordance with 503.08.*

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Header, ~~Cement Concrete~~ *PCC,* ~~Type~~ _____	~~LFT (m)~~ *SYS (m2)*
~~Header, Cement Concrete, Reconstruct~~	~~LFT (m)~~

The cost of *reinforcing steel,* edge protection, metal chairs, excavation, and necessary incidentals shall be included in the cost of ~~the pay items~~ *header, cement concrete or in the cost of the HMA surface, intermediate, and base.*

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 614, CONTINUED.

COMMITTEE COMMENTS ON THIS ITEM:

Does the railroad require a header? Tom Rueschoff will check on this.

The committee discussed the problems with standardizing the many variations of types of work that may take place at a crossing. It may be possible to develop standards only for maintenance at a crossing and require designers to develop plan details for any contract that is doing more extensive work on either side of the crossing.

Other sections containing specific cross references: None	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected: None	Standard Sheets potentially affected: See Item 18-13
Motion: M Second: M Ayes: Nays:	Action: Withdrawn

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 718, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 718 – UNDERDRAINS

718.01 Description

This work shall consist of constructing underdrains using pipe, granular aggregates, outlet protectors, or geotextiles in accordance with 105.03.

MATERIALS

718.02 Materials

Materials shall be in accordance with the following:

Coarse Aggregate, Class E or Higher, Size No. 8 or 9 904
Concrete, Class A.....702
Geotextile for Underdrains.....918.03
Reinforcing Steel.....910.01
Sod, including Nursery Sod 621
Structure Backfill 904
Underdrain ~~Pipes~~ *Pipe*.....715.02(d)
Underdrain Outlet ~~Pipes~~ *Pipe*.....907.22, 907.24

Rodent screens shall be woven stainless steel wire mesh or galvanized hardware cloth. Coarse aggregate No. 8 or 9 shall be used for 6 in. (150 mm) underdrain installations. Coarse aggregate No. 9 shall be used for 4 in. (100 mm) underdrain installations.

The mixture for HMA for underdrains shall be Intermediate OG19.0 mm in accordance with 401. An ESAL Category 5 in accordance with 401.04 and a PG Binder 76-22 shall be used. A MAF in accordance with 401.05 will not apply. Acceptance of the HMA for underdrains will be in accordance with 402.09.

CONSTRUCTION REQUIREMENTS

718.03 Pipe Installation

Trenches shall be excavated to the dimensions and grade shown on the plans. Pipes shall be secured to ensure that the required grade and horizontal alignment of the pipe are maintained. Perforated pipe shall be placed with the perforations down. The pipe sections shall be joined securely with the appropriate couplings, fittings, or bands. Aggregate for underdrains shall be placed in a manner which minimizes contamination. HMA for underdrains shall be placed and compacted separately from mainline mixtures. HMA for underdrains may be placed in one lift and shall be compacted with equipment in accordance with 409.03(d).

If plain end concrete pipe is being laid, ~~no~~ joint width shall not exceed 1/4 in. (6 mm).

718.04 Geotextile

Storage and handling of geotextiles shall be in accordance with the manufacturer's recommendations. Each geotextile roll shall be labeled or tagged. Damaged or defective geotextile shall be replaced as directed. The geotextile shall be placed loosely, but with no wrinkles or folds. The ends of subsequent rolls of geotextile shall be overlapped a minimum of 1.0 ft (0.3 m). The upstream geotextile shall overlap the downstream geotextile. Placement of aggregate shall proceed following placement of the geotextile. HMA for underdrains shall be placed and compacted separately from mainline mixtures. HMA for underdrains may be placed in one lift and shall be compacted with equipment in accordance with 409.03(d).

718.05 Underdrain Outlets

After the outlet pipe installation, the trench shall be backfilled as shown on the plans. Structure backfill shall not extend into the limits of the underdrain trench. The trench outside the limits of structure backfill shall be filled with materials suitable for growing vegetation. Aggregate and stabilized materials removed from an existing shoulder shall not be used as backfill and shall be disposed of in accordance with 206.07. At the time of installation, a rodent screen shall be placed on the outlet pipe or the ends of the underdrain pipe when located in inlets or catch basins.

718.06 Underdrain Outlet Protectors

Underdrain outlet protectors shall be constructed as shown on the plans.

718.07 Video Inspection

Underdrains and outlets shall be inspected using high resolution, high sensitivity, waterproof color video camera/recording equipment.

The camera/recording equipment shall be specifically designed for continuous viewing/recording of detailed images of the interior wall of pipes and transitions of the specified sizes. The equipment shall have the capability of viewing a minimum of 450 ft (140 m) into the pipes and shall be designed to include sufficient lighting to view the entire periphery of the pipe. The equipment shall have appropriate attachments to maintain a position in the center of the pipe and an electronic counter to continuously record the location of the equipment in the pipe. The recording equipment shall be a minimum four head industrial grade VHS recorder or a digital archiving and reviewing system. A color video printer shall be included in the equipment for printing observations during inspection.

The Engineer will determine the runs of the underdrain installations to be inspected. Video inspection shall be conducted after guardrail, lighting, sign installation, and final seeding or sodding operations are completed.

Damage discovered by the video inspection shall be repaired. Damage shall include but is not limited to; crushed or partially crushed ~~pipes~~ *pipe* that impedes the progress of the camera, blockages, vertical pipe sags filled with water to a depth of d/2 or greater, 90 degree connections, connector separations, cracks or splits in the pipes. All repaired sections shall be video reinspected prior to acceptance. A copy of the video inspection shall be submitted to the Engineer.

718.08 Patching Underdrains

Underdrains that are disturbed shall be repaired such that the underdrain is perpetuated. This repair shall include the construction of new outlets where the existing configuration prior to the damage cannot be reinstalled. The repairs shall be as approved by the Department. Once the repairs are completed, a video inspection may be required by the Department to verify that the repairs have been successfully completed.

Geocomposite edge drains that are disturbed shall be outletted as approved and not perpetuated.

718.09 Method of Measurement

Underdrain and outlet pipe will be measured ~~in accordance with 715.13,~~ *by the linear foot (meter), complete in place. If the pipe connects to structures such as manholes, inlets, or catch basins, the pipe will be field measured to the outside face of the structures.* Outlet protectors will be measured by the number and type of units installed.

Measurement of outlet pipe will be made along the centerline of the pipe from the point of connection with the underdrain pipe to the downstream end of the outlet pipe and will include all transitions, elbows, and increaser or decreaser connections.

Structure backfill will be measured in accordance with 211.09. HMA for underdrains will be measured by the ton (megagram).

Aggregate for underdrains will be measured by the cubic yard (cubic meter), complete in place. The pay limits will not extend beyond the neat lines shown on the plans.

Geotextiles will be measured by the square yard (square meter) based on the neat line limits shown on the plans.

Video inspections for underdrains will be measured by the linear foot (meter) as determined by the electronic equipment.

Patching of underdrains will not be measured.

Rodent screens~~, elbows, increaser or decreaser connections,~~ and other incidentals will not be measured for payment.

Concrete, reinforcing steel, or sod for underdrain outlet protectors will not be measured for payment.

718.10 Basis of Payment

The accepted quantities of underdrains and underdrain outlet pipe will be paid for in accordance with 715.14. Aggregate for underdrains will be paid for at the contract unit price per cubic yard (cubic meter). Geotextile for underdrains will be paid for at the contract unit price per square yard (square meter). Outlet protectors will be paid for at the contract unit price per each of the type of unit installed, complete in place. The accepted quantities of HMA for underdrains will be paid for at the contract unit price per ton (megagram).

Underdrain patching for structure installation will be paid for at the contract unit price per linear foot (meter) of underdrain, patching and shall be equal to the length of the theoretical pavement replacement as shown on the plans.

Structure backfill will be paid for in accordance with 211.10.

The final accepted quantity video inspection for underdrain will be paid for at the contract unit price per linear foot (meter).

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Aggregate for Underdrains	CYS (m3)
Geotextile for Underdrains	SYS (m2)
HMA for Underdrains	TON (Mg)
Outlet Protector, ____ type	EACH
Underdrain, Patching	LFT (m)
Video Inspection for Underdrain	LFT (m)

Geotextile for underdrains which has been rejected due to contamination or other reasons shall be replaced with no additional payment.

The cost of excavation, forming, reinforcing steel, concrete, curing materials, and sod shall be included in the cost of outlet protector.

The cost of providing the video inspection equipment, technician, videotapes, or computer disks shall be included in the cost of the underdrain video inspection. The cost of repair of underdrain pipes, aggregates, backfill, outlet protectors, geotextile fabric of providing video re-inspection of the repairs, etc. shall be included in the cost of the other pay items in this section.

Where underdrain repair for structure installation is required, the cost of underdrain pipe, aggregate for underdrains, geotextile for underdrains, HMA for underdrains, outlet protectors if required, video inspection for underdrains, and all other incidentals for underdrains shall be included in the cost of underdrain, patching. The cost of repairing underdrains damaged by activities other than for structure installation, or as defined above, shall be at the Contractor's expense.

The cost of disposal of unsuitable excavated materials, installation of pipe end caps, rodent screens, ~~elbows, increaser or decreaser connections,~~ and other incidentals shall be included in the cost of ~~other~~ *the* pay items *in this section*.

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 718, CONTINUED.

COMMITTEE COMMENTS ON THIS ITEM:

Mr. Cales pointed out that pay items proposed already exist in 715. Agenda item was revised to remove redundant pay items.

While reviewing 715, committee noted that paragraph with identical wording is in 715.13 and 715.14.

Mr. Keefer introduced a motion to create a new agenda item to strikeout lines 489-493 of 715.14 (page 555) of 2008 Specifications. Mr. Andrewski seconded the motion. The motion passed unanimously. (See Agenda Item 08-7-10 page 49).

Other sections containing specific cross references:

622.15 Pg 423
715.03 Pg 548
715.09 Pg 552
719.02 Pg 571

General Instructions to Field Employees
Update Required? Yes
By - Revision
Frequency Manual
Update Required? No

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

718-UNDR-01
718-UNDR-07

Motion: Mr. Keefer
Second: Mr. Andrewski
Ayes: 9
Nays: 0

Action: Passed as revised

___ RSP Effective: _____ Letting
___ RPD Effective: _____ Letting
_X_ 2010 Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Received FHWA Approval? Yes

Item No. 08-7-1
Mr. Keefer
Date: 02/21/08

REVISION TO 2008 STANDARD DRAWINGS

718-UNDR-01 Underdrain Details

COMMITTEE COMMENTS ON THIS ITEM:

Pipe may not always be 6″.

Remove references to pipe diameter.

Extend lines to show outlet pipe limits.

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? No
By - Addition or Revision
Frequency Manual
Update Required? No

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

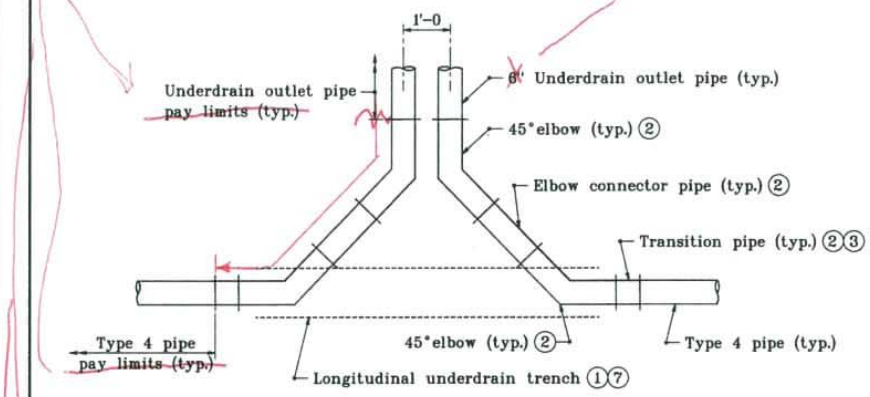
See Above

Motion: Mr. Keefer
Second: Mr. Andrewski
Ayes: 9
Nays: 0

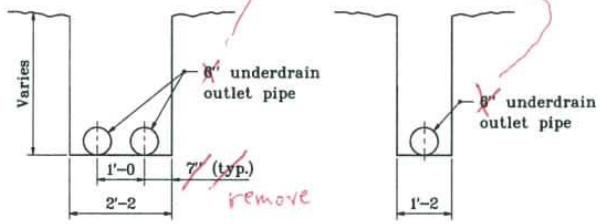
Action: Passed as revised

___ RSP Effective: _____ Letting
___ RPD Effective: _____ Letting
___ 20__ Standard Specifications Book
_X_ 2010 Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Received FHWA Approval? Yes

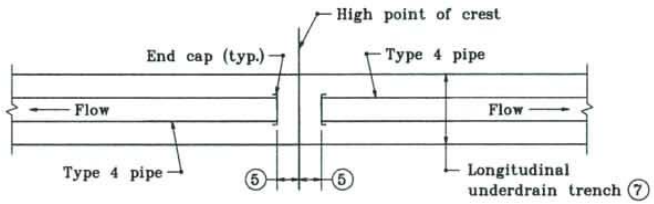


TWIN OUTLET DETAIL–PLAN VIEW

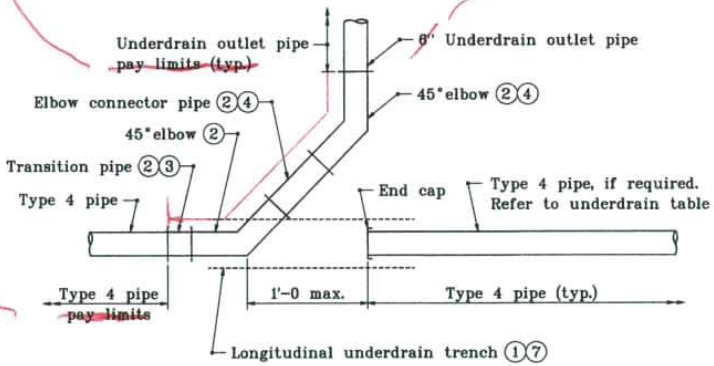


TWIN OUTLET DETAIL SINGLE OUTLET DETAIL

OUTLET TRENCH DETAILS



PLAN–INSTALLATION AT CREST



SINGLE OUTLET DETAIL–PLAN VIEW

NOTE:

1. Standard Drawing E 718–UNDR–07 for General Notes pertaining to this sheet.

INDIANA DEPARTMENT OF TRANSPORTATION

UNDERDRAIN DETAILS

JANUARY 2000

STANDARD DRAWING NO. E 718–UNDR–01

ANTHONY L. URENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 619, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 619 – PAINTING BRIDGE STEEL

619.01 Description

This work shall consist of preparing surfaces and applying paint to steel bridges in accordance with ~~these specifications~~ *105.03* or as directed.

MATERIALS

619.02 Materials

Materials shall be in accordance with the following:

Epoxy Intermediate Paint.....909.02(b)
Finish Coat for Weathering Steel.....909.02(e)
Multi-Component Inorganic Zinc Primer.....909.02(a)1
Organic Zinc Primer.....909.02(a)2
Polyurethane Finish Coat.....909.02(c)
~~Single Component Inorganic Zinc Primer.....909.02(a)2~~
Structural Steel Coating Systems.....909.03
Waterborne Finish Paint.....909.02(d)

Material safety data sheets shall be provided in the QCP for all materials to be delivered to the project site.

CONSTRUCTION REQUIREMENTS

619.03 Quality Control and Quality Assurance

The Contractor shall be responsible for the quality of work on the contract and shall ensure that all work has been performed by accepted quality control methods. A QCP shall be prepared and submitted by the Contractor in accordance with ITM 803. The QCP shall contain information specific to each bridge in the contract and shall be well organized in content. The QCP shall be submitted at least 15 work days prior to commencing this work. No work may begin until written notice has been received that the QCP was accepted by the Engineer. The ~~QCP~~ *QC* manager shall furnish the current ~~SSPC Structural~~ *referenced* Steel *Structures* Painting ~~Manual, Volumes 1 and 2,~~ *Council, now known as The Society for Protective Coatings, (SSPC) Standards* at the project site.

The painting Contractor shall be certified SSPC-QP 1 for cleaning and painting bridge steel which does not have ~~lead~~ *hazardous-based* coatings and certified SSPC-QP 2 for cleaning and painting *existing* bridge steel which does have ~~lead~~ *hazardous*-based coatings. Evidence of the *SSPC* certifications shall be provided in the QCP. A ~~QCP~~ *QC* manager and QC technicians shall also be identified in the QCP.

The Department will accept work performed on the project through quality assurance inspections and testing. Acceptance testing will be performed and will be the basis for which acceptance will be made.

(a) Acceptance Testing Definitions

The following definitions of terms shall apply to acceptance testing of painting steel bridge work.

1. Lot

A lot shall be a series of tests performed on each phase for each 1076 sq ft (100 m^2) or portions thereof.

2. Series

A series shall be 10 random tests performed by the Engineer on a lot.

3. Phase

A phase shall be painting operations consisting of either the cleaning of steel or the application of each coat of paint.

(b) Testing Procedure

During acceptance testing, the results of the random testing within a series will be compared to the specified requirements for that phase of work. A series of spot measurements spaced evenly over each lot will be made. The average of 10 spot measurements for each lot shall not be less than the specified thickness. A single spot measurement in any lot shall not be less than ~~80%~~ *80.0 percent* of the specified thickness. A reading below the minimum of the average of 10 spot measurements less than the specified thickness shall be considered a defect. If there is only one defect for the series of tests, the lot will be accepted provided there are no visual defects. If two defects are found in the first series of tests, then a second series of tests for each lot shall be measured. If three defects are found in the first series of tests, then the lot fails. If the first and second series of tests have four or less defects, both series pass. If there are more than four defects, then the lot fails.

If a lot fails, corrective action shall be taken to make the lot acceptable. Corrective action shall be submitted in writing and performed as approved. A failed lot shall not be covered until the whole lot has been accepted.

(c) Test Methods and Procedures

The current version of the following test methods and procedures shall be performed as a minimum for quality control by the Contractor. These and other tests may be performed for acceptance testing by the Engineer.

TEST/PROCEDURE	METHOD AND PROCEDURE
Surface Profile	ASTM D 4417
Clean Compressed Air	ASTM D 4285
Cleaning of Steel	SSPC Vis 1, Vis 3~~, and ISO 8501-1~~
Cleanliness of Recycled Ferrous Metallic Abrasives	*SSPC AB 2*
Dry Film Thickness	SSPC PA 2
State of Cure of Inorganic Zinc Primers	ASTM D 4752
Relative Humidity	ASTM E 337

619.04 Prosecution of Work

Prosecution of work shall be in accordance with the applicable requirements of 108.03. Once the ~~operations of~~ cleaning and painting *operations* have begun, it shall be

performed on all work days without stoppage until all work has been completed. If the contract contains more than one bridge, a schedule shall be included in the QCP which provides the sequence of work on the bridges. When work has begun on a bridge, it shall be performed until complete, including all cleanup.

Permission shall be obtained in writing to start or continue work at the hold points as follows:

(a) prior to the acceptance of the QCP and start of work;
(b) immediately following ~~a~~ *each phase of* surface preparation ~~phase~~;
(c) immediately before the application of the first coat;
(d) prior to the application of each succeeding coat; and
(e) after the final coat has cured.

A minimum of one day's notice shall be given in advance of each of the hold points.

619.05 Inspection Access to Bridges

Safe and reasonable access to all points of the bridge shall be provided for the Engineer's inspections immediately upon request. The inspection access equipment shall be obtained, maintained, and kept in safe working order *as described and agreed to in the QCP*.

619.06 Maintaining Traffic

The traffic lanes may be restricted when surface preparation or painting phases are being performed on a portion of the bridge over the traveled roadway, or as directed, when the need exists. A traffic maintenance plan shall be provided in the QCP and shall be in accordance with *801 and* the plans.

Construction signs in accordance with 801.04 shall be furnished and placement at each project site shall be as shown in the QCP. However, a "Bridge Painting Ahead" sign may be used in place of the "Road Construction Ahead" sign.

The traffic maintenance plan shall include a type of barrier system which shall protect against blasting of vehicles or pedestrians, eliminate abrasive materials and debris from falling onto the traveled portion of the pavement, and prevent the spreading of abrasive materials and debris in the area which may create a traffic hazard. If the intended purpose of the protective devices has not been accomplished, work shall stop until adequate corrections have been made. All abrasive material or debris shall be removed by the end of each day's work in accordance with 619.07.

619.07 Environmental and Safety Requirements

Pollution control and waste disposal of existing paint *residue* and debris shall be in accordance with the following requirements.

The QCP shall contain a written description of the Contractor's hazardous waste training program in accordance with 40 CFR 265.16 and ITM 803. Likewise, the waste contingency plan shall be contained in the QCP and in accordance with ITM 803.

A health and safety plan shall be provided in the QCP and in accordance with ITM 803. Workers shall be protected in accordance with IOSHA requirements. All

personnel on the project site shall wear personal protective equipment. The protective equipment shall be furnished by the Contractor, including to Department personnel. Training shall be given to all personnel provided with the protective equipment. Protective equipment shall include, but not be limited to, clean air supplied respirators, air purifying respirators, conventional hood as applicable, eye protection, and protective clothing. Two rooms for changing and washing shall be provided on ~~lead-primed~~ bridges *containing hazardous-based coatings*.

(a) Pollution Control

The containment procedure plan shall be provided in the QCP. The telephone numbers for the IDEM Emergency Response Branch, local health department, and all water intake users within 500 ft (150 m) shall be provided in the QCP.

Blasting materials, scrapings, wire brushings, and paint particles shall be contained in accordance with SSPC-Guide 6 ~~(CON)~~, Class ~~3~~*2A with method A, level 2 emissions*, specifically for ~~zinc~~ *non-hazardous* primed bridges, and SSPC-Guide 6 ~~(CON)~~, Class 2*A or better with method A, level 0 emissions*, for ~~lead~~ *hazardous* primed bridges.

If a spill, as defined in IDEM Regulation 327 IAC 2-6.*1* does occur, all work shall stop and immediate action shall be taken to clean up the site. Spills of materials, which enter or threaten to enter the waters *of the United States*, shall be handled in accordance with IDEM Regulation 327 IAC 2-6.*1*. The IDEM Emergency Response Branch, the local health department, and all water intake users within 500 ft (150 m) of the bridge shall be immediately contacted and advised of the spill. Written documentation of all such contacts and actions shall be kept. All applicable Federal, State, and local rules and regulations described in 619.07(b)1 shall be observed.

On *existing* bridges with ~~lead paint,~~ *hazardous-based coatings, either* steel grit blasting abrasives *in accordance with SSPC AB 1* shall be used and recycled~~. The~~ *or mineral/slag blasting abrasives in accordance with SSPC AB 3 shall be used and the waste residue generated shall be treated at a facility rendering it to a non-hazardous state and disposed of as special waste. If steel grit blasting abrasives are used, the* recycling equipment shall be capable of separating the blasting abrasive from the paint debris. *The method and type of abrasives chosen shall be included in the QCP.*

Each structure shall generate a separate waste stream and shall not be commingled with other materials. The *first sample of waste* residue from the ~~bridge~~ *structure* shall be sampled ~~within~~ *after* the first ~~five days~~ *day* of removal, and shipped to be tested *within 24 hours in a manner agreed to by the Department and as described in the QCP. The Engineer will witness the extraction of each waste residue sample. The Department will maintain custody of each waste residue sample until it is shipped. A duplicate of each waste residue sample will be retained by the Department. Each waste residue sample shall be taken by random method as described in the QCP which reflects representation of the entire structure. Each waste residue sample shall represent approximately 25 percent of the cleaning area.* Residue shall be placed in an approved container. Such containers shall be ~~properly~~ labeled and maintained to comply with 40 CFR 264.

No waste shall remain on the booms or on ~~the~~ *any* water surface overnight. All blasting debris shall be cleaned up after each day's work. All waste material shall be properly stored at the project site to prevent loss or pollution.

1. If the Cleaning and Painting is Performed by the Contractor

If hazardous materials are found in the first or a subsequent waste residue sample of an advertised, non-hazardous site, the Contractor shall immediately stop work and the contract will be terminated by the Department if the Contractor is not certified SSPC-QP2 in accordance with 619.03.

2. If the Cleaning and Painting is Performed by a Subcontractor

If hazardous materials are found in the first or a subsequent waste residue sample of an advertised, non-hazardous site, the subcontractor shall immediately stop work. If the subcontractor is not certified SSPC-QP2, in accordance with 619.03, the Contractor shall replace the original subcontractor with one who is certified SSPC-QP2, in accordance with 619.03 and authorized by the Department for work on those structures. The original subcontractor shall not be replaced on the other structures in the contract that have not been determined to contain hazardous materials.

(b) Waste Disposal

Disposal of existing paint *residue* and debris shall be in accordance with SSPC-Guide 7 ~~(DIS)~~ and the following requirements.

1. Laws to be Observed

Federal and State laws and regulations regulate the disposal of bridge painting debris. Bridge paint debris shall be manifested or certified and shall be disposed of at an appropriate disposal facility.

The Contractor shall have direct knowledge regarding compliance with laws pertaining to pollution control and waste management such as follows.

a. subtitle C of the Resource Conservation and Recovery Act, 40 CFR 261, 262, 263, 265, and 268;

b. the Solid Waste Rule, 329 IAC ~~2~~ *10*;

c. the Hazardous Waste Rule, 329 IAC 3.*1*;

d. the Air Pollution Rule ~~326~~ *329* IAC *6*-4;

e. the Water Pollution Rule, 327 IAC 2-6.*1*;

f. the United States Department of Transportation regulations 49 CFR 172.300; and

g. OSHA worker safety regulations 29 CFR 1926.

2. Time Limitations

The maximum time limit from the date the generated waste is placed in a container and the date the material is transported to a permitted treatment, storage, and disposal facility shall be 90 calendar days.

3. Marking of Spent Material Containers

Spent material containers shall be marked with the date that waste *residue* is first placed in the container. Until laboratory results are received concerning the category of the waste *residue*, the containers shall be labeled "LEAD PAINT WASTE DEBRIS" or "ZINC PAINT WASTE DEBRIS", as appropriate. *The labeling shall include the contract number, structure number, sample number, and sample date.* Labeling of containers as hazardous waste will not be required until the appropriate laboratory analysis determines the waste *residue* to be hazardous in accordance with the current RCRA hazardous waste definitions. Immediately upon notice that the waste *residue* is hazardous, the containers shall be marked in accordance with 49 CFR 172, Subpart D.

4. Instruction for Disposal of Paint Waste *Residue*

Sampling and analysis of the paint waste ~~debris~~ *residue* shall be performed to determine if the wastes are hazardous. If the waste *residue* is not found to be hazardous in accordance with current RCRA hazardous waste definitions, the waste *residue* material shall be disposed of at an appropriate disposal facility. If the waste *residue* is found to be hazardous, IDEM ~~shall~~ *will* be notified and an EPA identification number will be obtained ~~by the Department~~. This *number* will be provided to the Contractor within 30 days of the start of waste generation for bridges having hazardous waste paint debris. The waste *residue* from different bridges shall not be mixed. The Contractor shall have the *following* responsibilities ~~as follows~~:

a. determining the location for disposal, treatment, or recycling of the waste *residue*, obtaining the Engineer's approval of the site, and arranging with the approved site for acceptance of the materials;

b. preparing a hazardous waste manifest, as required by Federal and State requirements, for signature;

c. scheduling the shipment of waste *residue* to the permitted disposal site;

d. ensuring that the hazardous waste manifest is carried in the transportation vehicle;

e. ensuring that all required hazardous materials placards are properly displayed on the vehicle;

f. ensuring prompt movement of the vehicle to the disposal site; and

g. returning one copy of signed manifest documents to the Engineer. A copy of the chemical and physical analysis of the waste, all deposit receipts, manifests, and required paperwork for disposal shall be given to the Engineer and all waste *residues* disposed of before the contract will be accepted.

The waste disposal *procedure and* site, *for both hazardous and non-hazardous materials,* shall be identified in the QCP.

5. Instructions for Disposal of Other Project Generated Waste

The other wastes that may be generated on the project include, but are not limited to, spent solvents from cleaning of equipment and empty or partially empty containers of paint, paint thinners, spent abrasives, and solvents. The Contractor shall recycle or dispose of all project-generated waste materials.

If the waste is defined as a hazardous waste in accordance with the current RCRA definitions, the waste shall be recycled or disposed of in accordance with 619.07(b)4. All project generated waste and the method of recycling or disposal shall be identified in the QCP.

619.08 Surface Preparation

Cleaning of steel surfaces shall be performed by ~~a~~ *an* SSPC certified contractor. This requirement will not apply to the following:

(a) shop cleaning~~,~~*;*

(b) bearings at end bents~~,~~*;*

(c) small sections of beams at end bents or at piers with open joints~~,~~*;* or

(d) small sections of beams or other structural members where heat-straightening or similar repairs have taken place.

Surfaces to be painted shall be cleaned in accordance with SSPC classification, unless otherwise specified. The latest cleaning comparison chart available shall be provided in the QCP. Compressed air shall pass through an oil and water extractor before entering another apparatus.

Field cleaned steel surfaces shall be primed the same day as cleaned. If rust forms after cleaning, the surface shall be cleaned again before painting. Work shall be stopped when there is disagreement about whether a surface has been adequately cleaned. Written notification shall be provided specifically identifying the problem.

Cleaning shall be scheduled so that dust or other contaminates do not fall on wet, newly painted surfaces.

A dust collector, which according to the manufacturer's recommendations, is suitable for the containment type and size shall be used during all blast cleaning operations in preparation for all structural steel paint systems and as directed for a partial paint system. The dust collector and its use shall be described in the QCP.

The surface profile of cleaned new steel surfaces shall not be less than 1 mil (25 µm) and not greater than 2 mil (50 µm). The surface profile of cleaned existing steel shall not be less than 1 mil (25 µm) and not greater than 3 mil (75 µm).

Pressure washing in accordance with 619.08(a) and solvent cleaning in accordance with 619.08(b) shall be performed *to remove all oils and soluble salts* before all other cleaning methods *are started. The Contractor may propose alternate cleaning methods in the QCP that will accomplish the removal of all oils and soluble salts.*

(a) Pressure Washing

All surfaces to be painted and the tops of pier and abutment caps shall be washed. The washing shall be accomplished by means of a low pressure power water washer with potable water. The pressure shall be between 800 and 1500 psi (5 and 10 MPa). If detergents or other additives are added to the water, the surface shall be rinsed with potable water before the detergents dries. All washed surfaces shall be completely free of all foreign matter and shall be approved prior to other surface preparation activities.

(b) Solvent Cleaning

After pressure washing has been approved, solvent cleaning shall be in accordance with SSPC-SP1.

(c) Near-White Blast Cleaning

Near-white blast cleaning shall be in accordance with SSPC-SP10/NACE No. 2.

(d) Commercial Blast Cleaning

Commercial blast cleaning shall be in accordance with SSPC-SP6/NACE No. 3.

(e) Hand Tool Cleaning

Hand tool cleaning shall be in accordance with SSPC-SP2.

(f) Brush-Off Blast Cleaning

Brush-off blast cleaning shall be in accordance with SSPC-SP7/NACE No. 4.

(g) Power Tool Cleaning

Power tool cleaning shall be in accordance with SSPC-SP3.

(h) Power Tool Cleaning to Bare Metal

Power tool cleaning to bare metal shall be in accordance with SSPC-SP11.

If mill scale is encountered on a structure advertised as having either existing hazardous materials or non-hazardous materials, the mill scale shall be removed. All mill scale shall be removed, except for that mill scale which remains in the lower portion of deep pits. Such mill scale may remain if approved by the Engineer.

619.09 Paint Systems

Paint systems shall be applied in accordance with the manufacturer's recommendations. The dry film thickness of a paint coating will be measured with a calibrated film thickness gauge. *All paint coatings shall have a dry film thickness not less than 80 percent of the required dry film thickness.*

(a) Structural Steel Paint System

The coating system shall consist of an inorganic zinc primer with a dry film thickness of 3 mil (75µm), an epoxy intermediate coat with a dry film thickness of 4 mil (100 µm), and a polyurethane finish coat with a dry film thickness of 3 mil (75 µm) for the painting of steel bridges and other structural steel.

(b) Partial Paint System

The coating system shall consist of organic zinc primer with a dry film thickness of 3 mil (75 µm) and a waterborne finish coat with a dry film thickness of 3 mil (75 µm) for partial painting of steel bridges and other structural steel.

619.10 Painting

Painting shall be performed by a SSPC certified contractor, except as noted in 619.08. All technical data sheets containing the manufacturer's recommendations and instructions shall be provided in the QCP and in accordance with ITM 803.

Concrete at all junction points of concrete and steel shall be adequately shielded or otherwise protected so the application of paint on steel is full and complete, and that spraying onto the concrete is minimized.

If a blasted or painted surface is unsatisfactory, removal of the paint, thorough cleaning of the surface, and repainting or other correction will be required as directed. Where defects or damages occur in a film of any coating, all defective areas shall be removed to soundly bonded paint or bare steel and painted to the specified thickness.

No lettering shall be painted on bare or painted steel surfaces, except marks required for erection and project information stenciled in accordance with 619.10(g).

All joints of all lapping members shall be caulked prior to applying the second coat of the Structural Steel Paint System. The caulk used shall be in accordance with the paint manufacturer's recommendations and described in the QCP. All vertical and diagonal lapping members shall be caulked at the top and sides. The bottom shall remain open for drainage. All horizontal members shall be caulked on the leading edge, in relation to traffic flow of the primary roadway, and sides. The trailing edge shall remain open for drainage. Where the primary road is a bridge deck, the underside of the bridge deck shall be caulked in relation to the traffic flow of the secondary road.

(a) Weather Limitations

Field painting will not be permitted between November 15 and the following April 1 *unless requested in the QCP and approved in writing*. Painting shall begin only when the 24 h ambient temperature is to remain above 50°F (10°C) after paint application, and the steel surface temperature is between 50 and 100°F (10 and 40°C). Coating and curing shall be done only when the relative humidity is to remain between 30 and 80~~%~~ *percent*. All variations of these weather limitations to allow the use of any coating below the minimum or above the maximum temperature or humidity as may be recommended by the manufacturer shall be *by written request and* provided in the QCP. The pot life and induction time shall be in accordance with the manufacturer's recommendations for the existing temperature and humidity.

Paint shall not be applied when the air is misty, or when conditions are otherwise unsuitable. The surface temperature of the steel to be painted shall not be within 5°F (3°C) of the dew point. When painting in a protected area to eliminate the above conditions, the steel shall remain under cover until the paint is dry. All wet paint which has been exposed to excessive humidity, rain, snow, or condensation shall be permitted to dry. Damaged paint shall then be removed. The surface shall be re-cleaned and repainted as directed. The Engineer will be the sole authority to decide when work may begin or shall stop due to weather conditions.

(b) Storage

Paint shall be stored in accordance with the manufacturer's recommendations. If paint is permitted to remain in storage, the containers shall be turned end for end at least

once per week. The paint shall be used within the manufacturer's recommended shelf life.

(c) Mixing

Paint shall be thoroughly mixed so that the pigment is completely in suspension and the consistency is uniform. Mechanical mixers shall be used in accordance with the manufacturer's instructions. The paint shall remain in this condition during application to the steel surface. After initial mixing and before application, zinc primer shall be strained through a metal screen not coarser than the No. 30 (600 µm) sieve.

Partially empty containers of paint shall not be used. Partial mixing of containers will not be permitted. All paint containers shall remain closed until needed for mixing.

(d) Thinning

When required for proper application, the thinning of field paint will be permitted. Only thinners recommended by the manufacturer and as approved shall be used. Thinners shall be added to paint in accordance with the manufacturer's recommendations. The maximum quantity added shall not exceed the manufacturer's recommendations. The thinned paint shall not exceed IDEM regulations for volatile organic compounds.

The Contractor shall contact IDEM and the local air pollution control board for information about any volatile organic compound regulations or restrictions. Proof of contact to these agencies shall be provided in the QCP.

(e) Application of Paint

All paint coatings shall be of colors to produce a distinct contrast with adjacent coatings, including the color of a clean steel surface.

Paint shall be applied by either an airless or conventional spray method which has been recommended by the paint manufacturer. The compressed air used for painting shall pass through an oil and water extractor before entering the paint pot. However, areas to be painted which are inaccessible to spray application or areas requiring touchup may be painted with brush or daubers. Epoxy intermediate and polyurethane finish paints may be applied by brushes or rollers provided the coating cures to a smooth and uniform finish.

Spray shall be adjusted to produce a uniform coating. ~~All~~ *If using the structural steel paint system in accordance with 619.09(a), all* 90 degree edges shall be striped *on the second and third coats,* and then repainted with the remaining steel surfaces. ~~Painting techniques shall minimize dry overspray. Dry overspray shall be removed prior to application of other coatings and after application of the finish coat.~~ *If specified, the stripe coat shall be allowed to dry to recoat dry time prior to painting the second and third coats on the remaining steel surfaces.*

~~All paint coatings shall have a dry film thickness not less than 80% of the required dry film thickness.~~

If using the partial paint system in accordance with 619.09(b), all 90 degree edges shall be striped on each of the coats, and then repainted with the remaining steel surfaces. If specified, the stripe coat shall be allowed to dry to recoat dry time prior to painting the remaining steel surfaces. Painting techniques shall minimize dry overspray.

Dry overspray shall be removed prior to application of other coatings and after application of the finish coat.

(f) Curing Time

The minimum curing time between coatings shall be 24 h for inorganic zinc primers and 8 h for the epoxy intermediate coat. The curing time will vary depending on the temperature and humidity. The inorganic zinc primer shall be cured to a minimum solvent resistance rating of 4 in accordance with ASTM D 4752 prior to the application of the epoxy intermediate coat. It shall be demonstrated that the inorganic zinc primer is in accordance with this requirement. The epoxy intermediate coat shall be cured in accordance with the manufacturer's recommendations prior to the application of the polyurethane finish coat. The polyurethane finish coat shall be applied within 12 calendar days of application of the epoxy intermediate coat.

The curing time of all other paint systems or coatings shall be in accordance with the manufacturer's recommendations.

(g) Stencil Identification

After the finish coat has been approved, project identification information shall be painted with a stencil in 2 in. (50 mm) black capital letters onto the outside of both facia beams, at the right end of the beam and near the end bent, which reads as follows:

_____
bridge number

_____
contract number

PAINTED _____
date

619.11 Shop Painting

All structural steel shall be cleaned in accordance with 619.08(c). All technical data sheets containing manufacturer's recommendations and instructions shall be provided in the QCP and in accordance with ITM 803.

All structural steel, except for ASTM A 709, grade 50W (ASTM A 709M, grade 345W) steel, shall receive an inorganic zinc primer, including faying surfaces of high strength bolted connections and areas in contact with concrete. When shear connectors have been specified, the top of the *top* flange shall not be painted.

Surfaces, other than the contact surfaces described above, which are inaccessible after erection shall be painted in the shop with the full paint system required on the completed bridge.

Machine finished surfaces for sliding contact shall be coated with heavy grease as soon as practicable after being accepted, but before removal from the shop.

Erection marks may be painted on zinc painted surfaces. Shop painted beams shall not be loaded for shipment until the paint is dry.

ASTM A 709, grade 50W (ASTM A 709, grade 345W) steel shall be left unpainted, except as shown on the plans. Surfaces, when specified, shall be painted in accordance with 619.09(a), except the finish coat shall be in accordance with 909.02(e).

619.12 Field Painting New Steel Bridge

All structural steel which has been painted with inorganic zinc primer in the shop, except for steel contact surfaces and surfaces to be in contact with concrete, shall be painted with the other coatings specified for structural steel paint system in accordance with 619.09(a). All steel surfaces which become inaccessible to field painting after final erection shall be painted with all coats of structural steel paint system before structural steel ~~in~~ *is* erected.

If application of the inorganic zinc primer on a steel surface is not permitted in the shop before erection of the bridge, the surfaces which are exposed shall be cleaned in accordance with 619.08(a), 619.08(b), and 619.08(c). These surfaces shall then be painted with the structural steel paint system after erection.

Concrete surfaces on steel bridges with structural steel to be cleaned and painted shall be prepared and sealed in accordance with 709.05(a) and (b).

Surface areas where the inorganic zinc primer was damaged during shipping, handling, and erection shall be cleaned in accordance with 619.08(a), 619.08(b), and either 619.08(d) or 619.08(h). Likewise, all bolt and field connections shall be cleaned in the same manner. All the damaged areas, and bolt and field connections shall then be painted with the inorganic zinc primer applied in the shop. This requirement will not apply to temporary steel bridges.

Where steel surfaces have been painted with the full paint system and the paint coatings have been damaged, the affected steel surface areas shall be cleaned in accordance with 619.08(h). Structural steel paint system shall then be re-applied.

619.13 Painting Existing Steel Bridges

The surfaces to be cleaned and painted shall include the surfaces of all steel members of the superstructure, substructure, floor beams, stringers, plates, castings, bearing assemblies, ornamental handrails, lattice work, and other steel appurtenances.

Concrete surfaces on existing steel bridges with structural steel to be cleaned and painted shall be prepared and sealed in accordance with 709.05(a) and (b).

If the contract specifies clean steel bridge, the bridge steel shall be cleaned in accordance with 619.08(a), 619.08(b), and either 619.08(d) or 619.08(h). The structural steel paint system in accordance with 619.09(a) shall be used for painting.

If the contract specifies clean steel bridge, partial, the bridge steel shall be cleaned in accordance with 619.08(a), 619.08(b), and either 619.08(d), or 619.08(g), or 619.08(h). The partial paint system in accordance with 619.09(b) shall be then be used for painting.

619.14 Drain Castings Treatment

~~Drain~~ *If indicated in the contract, bridge floor drain* castings shall be satisfactorily cleaned. The castings shall not be shot-blasted. If castings are sandblasted, a brush blast technique shall be used in accordance with 619.08(f).

The drain castings shall be painted with a black finish coat in accordance with 909.02(c).

619.15 Claims

No claim shall be made for damage, including but not limited to, damage for delay, increased expense, maintenance, start up costs, additional costs due to passage of time arising out of a dispute, or work stoppage relating to whether a surface was adequately cleaned or painted.

No claim shall be made due to a greater amount of paint used in excess of the minimums required by the contract or for the stoppage of work. ~~Each bridge shall be inspected before bidding for the exact type of primer that exists on each bridge.~~

619.16 Responsibility for Damage

Unless otherwise permitted by the Engineer in writing, the Contractor or subcontractor shall provide full containment as described in the QCP when performing the surface preparation operation and when applying all coats of paint (except primer coats) with spray equipment. All persons and property shall be protected from damage or injury from the surface preparation operations~~, paint,~~ and painting operations *by providing containment as described in the QCP*. Persons and property shall include, but not be limited to, pedestrians, vehicles, and other traffic upon or underneath a bridge, all portions of the bridge superstructure and substructure, and all adjacent property. The Contractor shall be responsible for damages in accordance with 107.17.

619.17 Method of Measurement

Cleaning, *cleaning bridge floor drain castings, caulking,* and painting will not be measured.

If a structure is advertised as having existing hazardous materials, no measurement will be made of the area covered by mill scale. For structures advertised as having existing non-hazardous materials, the area covered by mill scale will be measured for payment after a proper cleaning of the entire containment area or an agreed large portion there of and removing all other existing materials, including all paint and rust. The percentage of the area covered by existing mill scale will be representative of this entire area. The Pre-established Remedies for this Changed Condition apply in accordance with 104.02(d) and 619.18.

~~Floor drain~~ *Drain* extensions will be measured ~~per each drain extended~~ *in accordance with 715.13.*

Sealing concrete surfaces will be measured in accordance with 709.07.

The estimated weight (mass), length, and number of steel spans and type of primer shown on the plans or in the Proposal book is incidental information. Such information is approximate only. The Department will not guarantee its accuracy.

619.18 Basis of Payment

Removal of paint ~~of~~ *from* an existing bridge will be paid for at the contract lump sum price for clean steel bridge or clean steel bridge, partial, at the bridge number specified. The accepted quantities of existing steel bridges to be painted, or partial

painted, whichever is specified, will be paid for at the contract lump sum price for paint steel bridge or paint steel bridge, partial, at the bridge number specified.

(a) Prices used in Pre-Established Remedies to Changed Conditions

The following prices will be computed and used as the price for the respective item identified below in all Pre-Established Remedies to Changed Conditions referenced in this section.

1. *The price for the clean steel bridge item, per structure, used in all Pre-Established Remedies to Changed Conditions referenced in this section will be limited to the lesser of the following:*

    a. *70.0 percent of the sum of: the clean steel bridge item, paint steel bridge item, and environmental control item for that structure; or*

    b. *the actual amount for the clean steel bridge item for that structure shown in the Schedule of Pay Items.*

2. *The price for the environmental control item, per structure, used in all Pre-Established Remedies to Changed Conditions referenced in this section will be limited to the lesser of the following:*

    a. *8.0 percent of the sum of: the clean steel bridge item, paint steel bridge item, and environmental control item for that structure; or*

    b. *the actual amount for the environmental control item for that structure shown in the Schedule of Pay Items.*

3. *The price for the mobilization and demobilization item, per structure, will only be used in all Pre-Established Remedies to Changed Conditions referenced in this section if the painting is performed by the Contractor and will be limited to the lesser of the following:*

    a. *10.0 percent of the total contract price shown in the Schedule of Pay Items; or*

    b. *the actual amount for the mobilization and demobilization item shown in the Schedule of Pay Items. For a contract with multiple structures, the cost for mobilization and demobilization shown in the Schedule of Pay Items will be evenly distributed among all structures in order to determine a mobilization and demobilization cost per structure.*

If the cleaning and painting is performed by a subcontractor, the price for the mobilization and demobilization item used in all Pre-Established Remedies to Changed Conditions referenced in this section will be in accordance with 619.18(b)1.

(b) Pre-Established Remedies for Changed Conditions

1. Discovery of Hazardous Materials but No Mill Scale on a Site Advertised as Non-Hazardous

a. If the Cleaning and Painting is Performed by the Contractor

If the Department decides to terminate the contract due to the presence of hazardous materials discovered on an advertised non-hazardous site in the first waste residue sample taken, the following Pre-Established Remedies for this Changed Condition shall apply in accordance with 104.02(d). Payment will be for: mobilization and demobilization as computed in 619.18(a)3; traffic control items used to date; and reimbursement for payroll used between mobilization and demobilization in accordance with 109.05(a).

If the Department decides to terminate the contract due to the presence of hazardous materials discovered on an advertised non-hazardous site in a subsequent waste residue sample taken, the following Pre-Established Remedies for this Changed Condition shall apply in accordance with 104.02(d). Payment will be for: mobilization and demobilization as computed in 619.18(a)3; traffic control items used to date; and an agreed-upon percentage of other pay items for the work performed to date in accordance with 109.05(a).

If the Contractor is prequalified in accordance with 619.03 to remove the hazardous materials and as part of the Pre-Established Remedy to Changed Conditions, the Department directs the work to continue in accordance with 104.03, the payment will be an additional 25.0 percent of the environmental control item as computed in 619.18(a)2 and clean steel bridge item as computed in 619.18(a)1, all in accordance with 109.05 as payment for all additional costs incurred.

b. If the Cleaning and Painting is Performed by a Subcontractor

If the Department decides to terminate the portion of the contract pertaining to painting bridge steel due to the presence of hazardous materials discovered on an advertised non-hazardous site in the first waste residue sample taken, the following Pre-Established Remedies for this Changed Condition shall apply in accordance with 104.02(d) if either the painting bridge steel item(s) are terminated or if the painting subcontractor is not prequalified in accordance with 619.03. The payment will be for: mobilization at 5.0 percent of the total bid price for all painting item(s), demobilization at 5.0 percent of the total bid price for all painting item(s); traffic control item(s) used to date exclusively related to the painting operation; and reimbursement for the painting subcontractor's payroll used between painting subcontractor mobilization and painting subcontractor demobilization in accordance with 109.05(a).

If the Department decides to terminate the portion of the contract pertaining to painting bridge steel due to the presence of hazardous materials discovered on an advertised non-hazardous site in a subsequent waste residue sample taken, the following Pre-Established Remedies for this Changed Condition shall apply in accordance with 104.02(d) if either the painting bridge steel item(s) are terminated or if the painting subcontractor is not prequalified in accordance with 619.03. The payment will be for: mobilization at 5.0 percent of the total bid price for all painting item(s), demobilization at 5.0 percent of the total bid price for all painting item(s); traffic control item(s) used to date exclusively related to the painting operation; and an agreed-upon percentage of other pay items for the work performed to date in accordance with 109.05(a).

If the subcontractor is prequalified in accordance with 619.03 to remove the hazardous materials and as part of the Pre-Established Remedy to Changed Conditions,

the Department directs the work to continue in accordance with 104.03, the payment will be an additional 25.0 percent of the sum of the environmental control item as computed in 619.18(a)2 and clean steel bridge item as computed in 619.18(a)1, all in accordance with 109.05 as additional payment for all additional costs incurred.

If it is necessary to authorize a replacement painting subcontractor, the payment will be, as part of the Pre-Established Remedy to Changed Conditions in accordance with 104.02(d), at the original painting item(s) bid prices adjusted as described in 619.18, to complete the work plus 10.0 percent of the total bid price of all painting bridge steel item(s) as compensation for replacement subcontractor mobilization and demobilization.

An amount for all additional costs incurred related to replacing the painting subcontractor, in accordance with 109.05 (f) of the total bid price of all painting bridge steel items as part of the Pre-Established Remedy to Changed Conditions in accordance with 104.02(d), will be paid.

2. Discovery of Mill Scale but No Hazardous Materials on a Site Advertised as Non-Hazardous

If, on a structure advertised as having existing non-hazardous materials and the presence of hazardous materials has not been confirmed by laboratory analysis, the area covered by mill scale comprises greater than 15.0 percent of the area in accordance with 619.17, additional compensation for the removal of the mill scale will be made as an adjustment to the clean steel bridge item in accordance with the following:

a. For areas greater than 15.0 percent and up to and including 25.0 percent of the area covered by mill scale, an additional payment of 15.0 percent of the clean steel bridge item as computed in accordance with 619.18(a)1 will be made.

b. For areas greater than 25.0 percent and up to and including 50.0 percent of the area covered by mill scale, an additional payment of 30.0 percent of the clean steel bridge item as computed in accordance with 619.18(a)1 will be made.

c. For areas greater than 50.0 percent and up to and including 75.0 percent of the area covered by mill scale, an additional payment of 45.0 percent of the clean steel bridge item as computed in accordance with 619.18(a)1 will be made.

d. For areas greater than 75.0 percent of the area covered by mill scale, an additional payment of 60.0 percent of the clean steel bridge item as computed in accordance with 619.18(a)1 will be made.

3. Discovery of Hazardous Materials and Mill Scale on a Site Advertised as Non-Hazardous

If the laboratory analysis of a waste residue sample on a structure advertised as having non-hazardous materials yields results indicating the presence of hazardous materials, the entire structure shall be considered as having mill scale and the following Pre-Established Remedy for this Changed Condition in accordance with 104.02(d) shall

apply. If the Department directs the work to continue and it is agreed upon in writing between the Contractor and the Department, the work shall proceed with the Contractor assuming all risks for removal of mill scale. An additional 55.0 percent of the environmental control item as computed in 619.18(a)2 and clean steel bridge item as computed in 619.18(a)1, all in accordance with 109.05 will be paid as additional compensation for the removal and disposal of the hazardous materials, the removal of the mill scale, the additional containment required, and all other incidental items associated with the removal of the hazardous materials and mill scale.

Drain extensions will be paid for ~~at the contract unit price per each~~ *in accordance with 715.14*.

Sealing concrete surfaces will be paid for in accordance with 709.08.

~~If the contract includes a pay item for maintaining traffic, such work will be paid for at the contract lump sum price for maintaining traffic, at the bridge number specified.~~

Environmental control devices required when cleaning and painting existing steel bridges will be paid for at the contract lump sum price for environmental control at the bridge number specified.

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Clean Steel Bridge, Br. No. _____	LS
Clean Steel Bridge, Partial, Br. No. _____	LS
~~Drain Extension~~	~~EACH~~
Environmental Control, Br. No. _____	LS
~~Maintaining Traffic, Br. No. _____~~	~~LS~~
Paint Steel Bridge, Br. No. _____	LS
Paint Steel Bridge, Partial, Br. No. _____	LS

The cost to prepare a QCP shall be included in the cost of ~~other~~ *the* pay items *of this section*. The cost of providing the Department with access to the bridge, the use of special cleaning methods, handling debris containers, *and* seasonal or weather limitations~~, and~~ *shall be included in the cost of the pay items of this section. The cost of all* labor, materials, and equipment required for maintaining traffic shall be included in the *maintaining traffic item in accordance with 801. If no maintaining traffic item is included in the contract, the* cost of ~~other~~ *all labor, materials, and equipment required for maintaining traffic shall be included in the cost of the* pay items *of this section.*

If a structure is advertised as having existing hazardous materials, no additional payment will be made for the removal of mill scale. The cost of the removal of mill scale shall be included in the cost of clean steel bridge or clean steel bridge, partial.

If a structure is advertised as having existing non-hazardous materials and the percentage of the area covered by mill scale is less than or equal to 15.0 percent of the total surface area of a structure measured in accordance with 619.17 no additional payment will be made for the removal of mill scale. The cost of the removal of mill scale shall be included in the cost of clean steel bridge or clean steel bridge, partial.

The cost of furnishing all materials, equipment, and labor required for washing, solvent cleaning, scraping, steel brushing, or other acceptable methods for removing paint in the locations directed shall be included in the cost of clean steel bridge or clean steel bridge, partial. *The cost of cleaning bridge floor drain castings shall be included in the cost of clean steel bridge or clean steel bridge, partial.*

The cost of providing containment in accordance with 619.16 shall be included in the cost of the pay items of this section.

The cost of furnishing all materials *including caulk*, equipment, and labor to perform *caulking and* painting with structural steel paint system shall be included in the cost of paint steel bridge and to perform painting with partial paint system shall be included in the cost of paint steel bridge, partial. ~~Painting will not be paid for separately, unless so specified. The cost thereof shall be included in the cost of other pay items.~~ *The cost of furnishing all materials, equipment, and labor to perform painting of the bridge floor drain castings shall be included in the cost of paint steel bridge or paint steel bridge, partial.*

The cost of all equipment, material, labor, testing, *shipping of waste residue samples*, and disposal of spent materials, *waste residues*, and debris shall be included in the cost of environmental control. No additional payment will be made for delays from all operations undertaken for this work. The absence of an environmental control pay item shall not negate the Contractor's responsibility for complying with the environmental control requirements in all phases of this work. *If a pay item for environmental control is not included in the contract, the cost of all aspects of environmental control shall be included in the cost of the pay items of this section.*

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 619, CONTINUED.

COMMITTEE COMMENTS ON THIS ITEM:

Tony Scott of LaPorte District and Jim Reilman, Construction Field Engineer, discussed issues involving changed conditions on paint projects.

Item was withdrawn.

Mark Miller, Chair, polled the committee on the following concepts:

1) The concept of adding safety issues and environmental issues to the QCP.

   Results: 8 members voted for the concept. One member voted against the concept.

2) Should INDOT have predetermined remedies for use on paint projects with changed conditions?

   Results: 8 members for and one member against.

Mr. Miller appointed an ad hoc committee to study this issue and decide if predetermined remedies (beyond the existing specification) are to be used. The committee is also tasked with determining in what section of the Specifications predetermined remedies for paint should be placed.

Mr. Miller appointed Bob Cales, Ron Heustis, Jim Reilman, Tony Scott and Dennis Kuchler to this ad hoc committee.

Other sections containing specific cross references:

619.07
619.06 Pg 392

619.08
619.10 Pg 398

619.07(b)1
619.07(a) Pg 393

619.08(h)
619.12 Pg 401

619.07(b)4
619.07(b)5 Pg 396

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By – Addition or Revision

Recurring Special Provisions potentially affected:

709-M-019

Standard Sheets potentially affected:

704-BDCG-05

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 702, BEGIN LINE 471, DELETE AND INSERT AS FOLLOWS:

702.10 Pumping Concrete

If the Contractor elects to convey concrete by means of pumping, the concrete shall be handled so as to minimize disturbance to the concrete which significantly alters the properties of the concrete being pumped, especially the loss or variability of the air content. The pumping equipment shall be mechanically sound, suitable in kind, and adequate in capacity for the proposed work. The concrete shall not be pumped through aluminum or aluminum alloy pipe. All pipes used for pumping concrete shall be kept clean and free from coatings of hardened concrete. Pump lines shall not rest directly on epoxy coated reinforcing ~~steel~~ *bars*. The pumping equipment shall be located such that operational vibrations will not damage freshly placed concrete.

SECTION 702, BEGIN LINE 617, DELETE AND INSERT AS FOLLOWS:

2. Permanent

Fabricated permanent metal forms for concrete deck slabs may be used as an alternate method of forming on a steel beam, steel girder, prestressed concrete I-beam, prestressed concrete spread box beam, or prestressed concrete bulb-T beam bridge. Permanent metal forms shall not be removed, and shall otherwise be in accordance with the applicable requirements of 702.13(e).

The metal forms shall be designed on the basis of dead load of form, ~~reinforcing steel~~ *reinforcement*, and plastic concrete plus 50 lb/sq ft (2.4 kPa) for construction loads. The unit working stress in the steel sheet shall be not more than 0.725 of the specified minimum yield strength of the material furnished but not to exceed 36,000 psi (250 MPa). Deflection under the weight of the forms, the plastic concrete and ~~reinforcing steel~~ *reinforcement* shall not exceed 1/180 of the form span or 0.5 in. (13 mm) whichever is less. However, the deflection loading shall not be less than 120 lb/sq ft (5.8 kPa) total. The permissible form camber shall be based on the actual dead load condition. Camber shall not be used to compensate for deflection in excess of the foregoing limits. The design span of the form sheets shall be the clear span of the form plus 2 in. (50 mm) measured parallel to the form flutes. If the design span of the form sheets exceeds 9.5 ft (2.9 m), concrete will not be permitted to be placed in the valleys of the corrugations of the metal forms. Physical design properties shall be computed in accordance with requirements of the American Iron and Steel Institute Specifications for the Design of Cold Formed Steel Structural Members.

All ~~reinforcing steel~~ *reinforcement* shall have a minimum clearance of 1 in. (25 mm) from the forms. The plan dimensions from the top surface for all primary deck ~~reinforcing steel~~ *reinforcement* shall be maintained. The deck ~~reinforcing steel~~ *reinforcement* shall be tied down at a maximum of 6 ft (1.8 m) centers. Permanent metal forms shall not remain in place closer than one foot from any joint exposed to the underside of the slab, except when an overlay is used on the deck.

SECTION 702, BEGIN LINE 668, DELETE AND INSERT AS FOLLOWS:

Form supports at prestressed concrete I-beam and box beam bridges shall be placed in direct contact with the sides of the box or edge of the I-beam flange and shall be adjusted to maintain the required deck thickness. The form supports may be attached to steel inserts cast into the top of the box or I-beam, straps extending across the top of the

flange, hangers mechanically attached to reinforcing ~~steel~~ *bars* extending from the top flange, or by other approved methods. If straps are used across the top flange, they shall be No. 8 gage (4.2 mm) thick, fit tight, and shall not be galvanized. Welding of attachments directly to beam reinforcing ~~steel~~ *bars* shall not be permitted. In addition, the use of recesses cast into the beam to serve as a form support shall not be permitted.

SECTION 702, BEGIN LINE 999, DELETE AND INSERT AS FOLLOWS:

(a) General Requirements

Concrete shall not be placed until forms and reinforcing ~~steel~~ *bars* have been checked and approved. The forms shall be clean of all debris before concrete is placed. The method and sequence of placing concrete shall be approved.

SECTION 702, BEGIN LINE 1029, DELETE AND INSERT AS FOLLOWS:

Where new concrete is to abut existing concrete, the existing concrete surfaces and existing exposed reinforcing ~~steel~~ *bars* shall be cleaned free of dust, chips and water. Epoxy resin adhesive, in accordance with 909.11, shall be used to coat the existing concrete surfaces. The epoxy coating shall be tacky at the time that the new concrete is placed. If the epoxy coating has cured beyond the obvious tacky condition, it shall be reapplied prior to placing the new concrete.

SECTION 702, BEGIN LINE 1404, DELETE AND INSERT AS FOLLOWS:

702.27 Method of Measurement

Concrete will be measured by the cubic yard (cubic meter) in accordance with the neat lines shown on the plans or as directed. No deductions will be made for the volume of joint material, embedded reinforcement, encased piles, or for a pipe with an area of less than 1 sq ft (0.1 m^2).

Cast iron ~~drain pipes,~~ grates, basins, and fittings will be measured by the pound (kilogram) based on the theoretical weight (mass) shown on the plans. Bronze plates will be measured by the pound (kilogram) based on a theoretical weight of 536 lb/ft^3 (mass of 8 540 kg/m^3). The volume will be computed based on finished dimensions. Steel drain pipe will not be measured for payment. Field drilled holes will be measured by the number of holes drilled.

Concrete in railings will be measured in accordance with 706.05. Reinforcing ~~steel~~ *bars* will be measured in accordance with 703.07 *Cast iron soil pipe will be measured in accordance with 715.13*.

702.28 Basis of Payment

The accepted quantities of structural concrete will be paid for at the contract unit price per cubic yard (cubic meter) of concrete, for the class and use specified. Cast iron grates, basins, and fittings will be paid for at the contract unit price per pound (kilogram). ~~Cast iron soil pipe will be paid for at the contract unit price per pound (kilogram) for the diameter specified.~~ Bronze plates will be paid for at the contract unit price per pound (kilogram). Steel drain pipe will be paid for at the contract lump sum price. Field drilled holes in concrete will be paid for at the contract unit price per each.

Concrete in railings will be paid for in accordance with 706.06. Reinforcing ~~steel~~ *bars* will be paid for in accordance with 703.08. *Cast iron soil pipe will be paid for in accordance with 715.14*.

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 702, BEGIN LINE 1466, DELETE AS FOLLOWS:

~~Soil Pipe, Cast Iron, _____ in. (mm) .....LBS (kg)~~
~~diameter~~

SECTION 702, BEGIN LINE 1484, DELETE AS FOLLOWS:

The cost of precast prestressed concrete deck panels shall be included in the cost of concrete, C, superstructure. The pay quantity of such concrete in the slab will be computed from the dimensions for the formed and poured bridge floor slab shown on the plans. The pay quantity of reinforcing ~~steel~~ *bars* will be the plan quantity shown with no adjustment for eliminating the bottom reinforcing ~~steel~~ *bar* layer nor for additional reinforcing ~~steel~~ *bars* required due to use of the precast concrete deck panels.

Elastomeric bearings will not be paid for directly, unless otherwise specified. The cost thereof shall be included in the cost of the structural member they support. The cost of protecting existing footings to be extended shall be included in the cost of concrete, B, footings, unless otherwise specified.

The cost of grout for grouting reinforcing ~~steel~~ *bars* in place, the length of grouted hole recommended by the grout manufacturer in excess of the length shown on the plans, and the additional length of reinforcing ~~steel~~ *bars* required shall be included in the cost of field drilled hole in concrete.

COMMITTEE COMMENTS ON THIS ITEM:

To be resubmitted as separate item.

Other sections containing specific cross references:

702.10
702.20(b) Pg 467
702.20(a)
704.04 Pg 481

702.27
704.07 Pg 484
714.07 Pg 543
717.08 Pg 566

702.28
206.11 Pg 175
704.08 Pg 485
714.08 Pg 544

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision
Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

709-M-019

Standard Sheets potentially affected:

704-BDCG-05

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 704, BEGIN LINE 3, DELETE AND INSERT AS FOLLOWS:

704.01 Description

This work shall consist of placing cement concrete and reinforcing ~~steel~~ *bars* as a bridge floor in accordance with these specifications and in reasonably close conformance with the lines, grades, and cross sections as shown on the plans or as directed.

704.02 Materials

Materials shall be in accordance with the following:

Castings	910.05
Cast Iron Soil Pipe	908.10
Concrete, Class C	702
Joint Materials	906
Reinforcing ~~Steel~~ *Bars*	910.01

SECTION 704, BEGIN LINE 33, DELETE AND INSERT AS FOLLOWS:

704.04 Placing Reinforcement and Concrete

Applicable provisions of 703 shall apply to placing reinforcing ~~steel~~ *bars*. No concrete shall be placed until the reinforcement is entirely and securely in place and has been inspected and approved. Walkways shall be in accordance with 702.20(a). Placing of reinforcement during placing of concrete will not be permitted without prior written approval. Splices, when permitted, shall be at locations of least tension in the steel.

SECTION 704, BEGIN LINE 87, DELETE AND INSERT AS FOLLOWS:

The finishing machine shall be in accordance with the applicable requirements of 508.04(b) except it shall have a minimum of one reciprocating non-vibrating ~~screen~~ *screed*. The weight of the machine shall not cause undue deflection of the bridge members or falsework. The machine shall travel on steel rails, pipe, or other approved grade control, which shall be adequately supported by adjustable support securely fastened in place at spacing sufficiently close to prevent any appreciable deflection of the ~~screen~~ *screed*. Welding of supports to structural bridge members will not be permitted. Prior to the placing of concrete, rails for the machine support shall be set to correct elevations shown on the plans or as approved. Rails shall extend a sufficient distance beyond the area to be placed so that the machine clears all finishing operations. The ~~screen~~ *screed* or strike-off beam shall be made of metal or the bottom shall be metal-clad. The bottom of the screed or strike-off shall be adjusted to the true cross section of the floor surface. The machine shall make only the number of passes over the slab as required to obtain a uniform surface free of voids and reasonably true to the planned profiles and cross section. Any necessary hand finishing after removing the rails and rail supports shall be accomplished promptly, in order to fill any depressions and remove any roughness of the surface in the area from which the supports are removed. The longitudinal mechanical screeding method will be permitted when approved. A mechanical bridge deck finishing machine using a rotating cylinder setting approximately parallel to the longitudinal movement of the machine and operating transversely may be used for screeding the bridge deck, when approved.

SECTION 704, BEGIN LINE 136, INSERT AS FOLLOWS:

As soon as the water begins to leave, the surface shall be given a final check with the light weight straightedge. The required cross section shall be preserved. The final surface shall be free from porous spots caused by the disturbance of coarse aggregate particles during the final checking and brooming. After final checking, the surface shall be tined in accordance with 504.03. If a new bridge deck is to be overlaid with latex modified concrete *in the same contract*, the surface of such deck shall be heavily broom textured to provide maximum bonding of the overlay material.

SECTION 704, BEGIN LINE 153, DELETE AND INSERT AS FOLLOWS:

704.06 Curing

Floor slabs shall be cured in accordance with one of the methods of 702.22. If membrane curing is used, no exposed reinforcing ~~steel~~ *bars* shall be coated with the material. Where it has been determined that a surface treatment to prevent scaling is to be used, the Engineer may prohibit the use of the membrane forming curing compound on the floor slab or any part of the superstructure. All vertical surfaces with reinforcing ~~steel~~ *bars* exposed shall be cured in accordance with 702.22. The floor shall be protected from pedestrian and vehicular traffic. If walking is necessary, the surface shall be timber laid on a double burlap cushion or approved equivalent.

Opening to traffic shall be in accordance with the applicable provisions of 702.24.

704.07 Method of Measurement

Concrete floor slab will be measured by the cubic yard (cubic meter) in accordance with 702.27. However, no allowance will be made for variations in beam fillet depths, coping depths, or diaphragm depths, which are deemed necessary due to the beam camber, as constructed, which varies from that shown on the plans. Reinforcing ~~steel~~ *bars* will be measured in accordance with 703.07. Castings ~~and cast iron pipe~~ will be measured in accordance with 702.27. *Cast iron soil pipe will be measured in accordance with 715.13.*

704.08 Basis of Payment

The accepted quantities of concrete floor slab will be paid for at the contract unit price per cubic yard (cubic meter) for concrete, C, superstructure. Reinforcing ~~steel~~ *bars* will be paid for in accordance with 703.08. Castings ~~and cast iron pipe~~ will be paid for in accordance with 702.28. *Cast iron pipe will be paid for in accordance with 715.14.*

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Concrete, C, Superstructure	CYS (m3)
~~Reinforcing Steel~~	~~LBS (kg)~~

The cost of forms, curing, finishing, preformed expansion joints within structure limits, and necessary incidentals shall be included in the cost of the pay items.

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 704, CONTINUED.

COMMITTEE COMMENTS ON THIS ITEM:

To be resubmitted as separate item.

Other sections containing specific cross references:

704.01	704.06	
None	705.03	Pg 483
704.02	704.07	
None	None	
704.04	704.08	
702.05	None	Pg 447
704.05		
None		

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

709-M-019

Standard Sheets potentially affected:

704-BDCG-05

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 08-7-5
Mr. Kuchler
Date: 02/21/08

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 709, AFTER LINE 68, INSERT AS FOLLOWS:

Concrete surfaces on existing bridges with structural steel to be repainted shall be prepared and sealed with epoxy penetrating sealer in accordance with 709.05(b). The portions of abutments and bents to be sealed shall include the vertical surfaces above the tops of such abutments or bents and the tops and the sides of the caps. For portions of piers or bents which do not have definite demarcations for caps, the sealer shall be extended 24 in. (600 mm) below the tops on all accessible sides.

COMMITTEE COMMENTS ON THIS ITEM:

Mr. Miller discussed a communication from ICA members about a perceived discrepancy between RSP 709-M-019 and the specifications. Mr. Reilman explained that use of epoxy penetrating seal on vertical surfaces was acceptable.

The ad hoc committee appointed by Mr. Miller will study this issue.

Other sections containing specific cross references: None	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected: 709-M-019	Standard Sheets potentially affected: 704-BDCG-05
Motion: M Second: M Ayes: Nays:	Action: Withdrawn

Item No. 08-7-6
Mr. Kuchler
Date: 02/21/08

REVISION TO 2008 STANDARD DRAWINGS

715-DDEX-01 Deck-Drain Extension for Steel-Members Structure
715-DDEX-02 Deck-Drain Extension for Concrete-Members Structure
715-DDEX-03 Deck-Drain Extension Connection

COMMITTEE COMMENTS ON THIS ITEM:

To be resubmitted.

Other sections containing specific cross references:

None

Recurring Special Provisions potentially affected:

709-M-019

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision
Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Standard Sheets potentially affected:

See Above

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 715, BEGIN LINE 23, DELETE AND INSERT AS FOLLOWS:

Materials shall be in accordance with the following:

B Borrow.....211
Bituminous Mastic Pipe Joint Sealer.....906.05
Concrete.....702
Flowable Backfill.....213
Geotextiles.....918.02
Reinforcing ~~Steel~~ *Bars*.....910.01
Rubber Type Gaskets.....906.04
Straps, Hook Bolts, and Nuts.....908.12
Structure Backfill.....904

SECTION 715, AFTER LINE 161, INSERT AS FOLLOWS:

(l) Drain Extensions

Drain extensions for bridge floor drain castings shall be in accordance with 907.24(b). Pipe support brackets and all hardware used to attach the drain extension to the drain casting and the pipe support bracket to the beam and to the drain extension shall be galvanized in accordance with ASTM A 123.

(m) Cast Iron Soil Pipe

If shown on the plans, cast iron soil pipe used for bridge floor drainage system shall be in accordance with 908.10.

SECTION 715, BEGIN LINE 355, DELETE AND INSERT AS FOLLOWS:

Grated box end sections shall be constructed according to the required pipe size and surface slope of the grated box end section specified at each location. Precast units shall be cast as a single complete unit except for the toewall which shall be cast in place. They shall be set and leveled on a 6 in. (150 mm) thick bed of coarse aggregate. If precast units are used and the adjoining pipe is to be field connected directly to the precast unit, the connection shall be made using a class A concrete collar of 6 in. (150 mm) minimum longitudinal and radial thickness. Inserts for approved lifting devices may be cast in the bottom slab of the precast sections. The number and location of lifting devices needed for handling shall be determined by the fabricator. All ~~reinforcing steel~~ *reinforcement* shall have a minimum cover of 1 1/2 in. (40 mm) and shall have a minimum lap of 21 in. (540 mm). The type A construction joint between the floor and the wall is optional for cast in place units.

SECTION 715, BEGIN LINE 392, DELETE AND INSERT AS FOLLOWS:

715.13 Method of Measurement

The accepted quantities of circular pipe, deformed pipe, slotted drain pipe, slotted vane drain pipe, end bent drain pipe, and sanitary sewer pipe will be measured by the linear foot (meter), complete in place. The length of pipe to be measured for payment will be based on the net length of pipe used, which will be obtained by multiplying the nominal length of each pipe section by the number of sections used. If the pipe connects to manholes, inlets, or catch basins, the terminal sections will be field measured to the outside face of the structure. The length of beveled or skewed terminal sections of circular corrugated metal pipe to be measured for payment will be the average of the top

and bottom centerline lengths for beveled ends or of the sides for skewed ends. Measurement of deformed pipe will be made along the bottom centerline of the pipe.

Floor drain extensions will be measured per each drain extended. Pipe support brackets and all hardware used to attach the drain extension to the drain casting and the pipe support bracket to the beam and to the drain extension will not be measured. Cast iron soil pipe will be measured by the pound (kilogram) based on the theoretical weight (mass) shown on the plans.

Reinforcing ~~steel~~ *bars*, straps, and hook bolts used in anchors will not be measured for payment. Concrete used for backfill of slotted drain pipe and slotted vane drain pipe will not be measured for payment.

SECTION 715, BEGIN LINE 455, DELETE AND INSERT AS FOLLOWS:

715.14 Basis of Payment

The accepted quantities of pipe will be paid for at the contract unit price per linear foot (meter) for pipe of the type, shape, and size specified, complete in place.

Pipe end sections, concrete anchors, and safety metal end sections will be paid for at the contract unit price per each for the size specified, complete in place. A concrete anchor attached at one end of twin pipes will be paid for as two concrete anchors. A concrete anchor attached at one end of triple pipes will be paid for as three concrete anchors. ~~Structure backfill will be paid for in accordance with 211.10. If utilized as a substitute for structure backfill or if used to backfill thermoplastic pipes fabricated of non-hydrostatic design basis resins, flowable backfill will be paid for as structure backfill. Otherwise, flowable backfill will be paid for in accordance with 213.09.~~ *Drain extensions will be paid for at the contract unit price per each. Cast iron soil pipe will be paid for at the contract unit price per pound (kilogram) for the diameter specified.*

Pavement replacement necessary due to structure installation under an existing pavement will be paid for at the contract unit price per ton (megagram) of HMA for structure installation of the type specified and per square yard (square meter) for PCCP for structure installation. Subbase will be paid for in accordance with 302.09.

Structure backfill will be paid for in accordance with 211.10. Where used as a substitute for structure backfill *or if used to backfill thermoplastic pipes fabricated of non-hydrostatic design basis resins*, flowable backfill will be paid for as structure backfill. When specified for pipe backfill, flowable backfill will be paid for in accordance with 213.09.

SECTION 715, AFTER LINE 515, INSERT AS FOLLOWS:

Drain Extension ..... EACH

SECTION 715, AFTER LINE 607, INSERT AS FOLLOWS:

Soil Pipe, Cast Iron, _____ in. (mm) ..... LBS (kg)
diameter

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 715, BEGIN LINE 611, DELETE AND INSERT AS FOLLOWS:

The cost of reinforcing ~~steel~~ *bars*, straps, and hook bolts used in anchors shall be included in the cost of the concrete anchor. The cost of the toe plate anchor and galvanized bolts required for pipe end sections and safety metal end sections shall be included in the cost of the pay items. *The cost of pipe support brackets and all hardware used to attach the drain extension to the drain casting and the pipe support bracket to the beam and to the drain extension shall be included in the cost of the pay items.* The cost of concrete backfill for slotted drain pipe and slotted vane drain pipe shall be included in the cost of the pay items.

SECTION 715, BEGIN LINE 635, DELETE AND INSERT AS FOLLOWS:

The cost of concrete, grating, pipe tubing, reinforcing ~~steel~~ *bars*, aggregate leveling bed, hardware cloth, and necessary incidentals, for construction of grated box end sections will be included in the cost of the grated box end section.

COMMITTEE COMMENTS ON THIS ITEM:

"Reinforcing bar" changes. To be resubmitted.

Other sections containing specific cross references:

715.02		715.10	
717.02	Pg 563	None	
715.13		**715.14**	
205.06	Pg 167	205.07	Pg 168
717.08	Pg 566	717.09	Pg 566
718.09	Pg 569	718.10	Pg 570
719.07	Pg 573	719.08	Pg 573

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision
Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

709-M-019

Standard Sheets potentially affected:

704-BDCG-05

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 801, BEGIN LINE 68, INSERT AS FOLLOWS:

801.03 General Requirements

The applicable requirements of the MUTCD shall apply to the installation and materials for traffic control devices subject to the requirements of 107.08 and 107.12. When the plans do not include a maintenance of traffic plan, the Engineer will provide such a plan to the Contractor. The Contractor shall be responsible for the field layout, placement, operation, maintenance, and removal of temporary traffic control devices. A worksite traffic supervisor certified by the American Traffic Safety Service Association, ATSSA, or approved equal certifying organization, shall direct all field layout, placement, operation, maintenance, and removal of temporary traffic control devices. The certified worksite traffic supervisor, CWTS, shall ensure that all traffic control devices, except temporary concrete barrier, meet acceptable standards as outlined in the plans, specifications, and ATSSA's "Quality Standards for Work Zone Traffic Control Devices" prior to installation. The CWTS shall also, prior to installation, ensure that all traffic control devices can be installed in accordance with the plans, specifications, and the MUTCD. All problems shall be reported to the Engineer so a resolution can be worked out prior to installation. The field layout will be reviewed and concurred with by the Engineer prior to placement of any temporary traffic control devices. The CWTS shall be present for the initial setup and all phase changes during the life of the project. The CWTS may designate responsible Contractor personnel to perform day to day operation and maintenance of the temporary traffic control devices. These responsible personnel shall work under the direction of the CWTS and their names shall be given to the Engineer on the project. A copy of the CWTS's certification shall be provided to the Engineer prior to the start of construction or placement of temporary traffic control devices or if the worksite traffic supervisor changes.

Regulatory control devices shall be erected only as directed.

Advisory speeds to be posted will be determined by the Department.

The names and telephone numbers of the superintendent and one other responsible employee shall be furnished. Such employees shall be on call or available at night, on weekends, or during other non-working periods to repair or replace all traffic control devices which may become damaged or inoperative.

When traffic lanes are restricted and when specified as a pay item, a patroller shall inspect and maintain traffic control devices. The patroller shall patrol the construction zone and shall immediately correct, maintain, and repair traffic control devices or notify the Contractor designated persons for immediate repair to such traffic control devices. A full time patroller shall be on duty during periods when work is not in progress.

Temporary traffic control devices shall be maintained continuously, except as described herein, to ensure visibility and to protect the public. All reflective sheeting backgrounds and lights shall be kept clean of foreign matter. The Contractor shall complete a "Traffic Control Device Report" weekly. This report is supplied in the Proposal Book for the contract and is to insure that the traffic control devices are looked at daily. The report does not always need to be filled out by the CWTS but must be

reviewed by the CWTS for completeness and accuracy. The report shall be signed by the person who filled it out and initialed by the CWTS that it was reviewed. The Engineer will sign and date the report when received. The Engineer will not be responsible for the report's completeness and accuracy. If the CWTS feels that a situation exists where the temporary traffic control devices do not need to be checked daily for a certain period of time, the CWTS and the Engineer must agree on how often they should be checked.

The location by reference post and the date and time of operation of Temporary Worksite Speed Limit sign assemblies shall be recorded daily on a form provided by the Department. The completed report shall be submitted weekly to the Engineer. The report shall be completed and signed by the CWTS or their designee and shall be reviewed by the CWTS for completeness and accuracy.

Except for construction warning lights and temporary signals, the ATSSA brochure titled Quality Standards For Work Zone Traffic Control Devices will be used as a guide to determine if temporary traffic control devices are Acceptable, Marginal, or Unacceptable as defined in the brochure. Upon initial setup and phase changes of temporary traffic control devices, all individual devices shall be of the Acceptable classification. A device not completely covered or removed when the message does not apply or when directed, will be considered unacceptable.

A temporary traffic control device will be deemed to be in non-compliance when considered Unacceptable. A type of temporary traffic control device will be deemed to be in non-compliance when 25% or more of the individual devices are considered Marginal. Damages may be assessed in accordance with 105.14 for non-compliance.

Non-compliance of construction warning lights will be in accordance with 801.14.

All barricades, signs, or flashing arrow signs shall be moved from one location and re-erected at another location as shown on the plans or as directed.

Where two-way traffic is to be maintained on a one-way pavement, and where the existing shoulders on such roadway are earth, aggregate No. 73 shoulders shall be compacted in accordance with 303.06 as shown on the plans. Compacted aggregate shoulders shall remain in place unless subsequent construction activities on the contract require its removal.

Temporary drainage structures, temporary concrete median barrier units, and other temporary devices required and used for traffic maintenance shall remain the property of the Contractor.

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 801, CONTINUED.

Other sections containing specific cross references:

105.14 Pg. 46
105.09(d) Pg. 104
801.12(b) Pg. 617

Recurring Special Provisions potentially affected:

None

Motion: Mr. Heustis
Second: Mr. Cales
Ayes: 9
Nays: 0

General Instructions to Field Employees
Update Required? No

Frequency Manual
Update Required? No

Standard Sheets potentially affected:

None

Action: Passed as submitted

_x_ RSP Effective: July Letting
___ RPD Effective: _____ Letting
_x_ 2010 Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Received FHWA Approval? Yes

Item No. 08-7-9
Mr. Wright
Date: 02/21/08

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 920, BEGIN LINE 616, DELETE AND INSERT AS FOLLOWS:

Six sets of shop drawings shall be submitted for lighting standard assemblies, luminaires, ~~service points, circuit breaker enclosures,~~ *and* external drive assemblies~~, and multiple relay switches~~. A copy of the transmittal shall be given to the Engineer. These items shall not be ordered or installed until shop drawings have been approved.

These drawings will be reviewed for design features only. The Contractor shall be responsible for dimensions, accuracy, and fit of work. The drawings for conventional light standards shall show the shaft outside diameter, height, wall thickness, the arm length rise, size, handhole details, grinding details, materials used, and complete anchor bolt details including bolt circle-projection and hardware. When a breakaway base is required, details shall be shown. ~~Service point shop drawings shall show the arrangement and brand name of each component.~~

COMMITTEE COMMENTS ON THIS ITEM:

Items deleted from this specification are currently accepted by a type C certification in accordance with section 920.01(h).

Other sections containing specific cross references:

920.01(b)7

Recurring Special Provisions potentially affected:

None

Motion: Mr. Wright
Second: Mr. Cales
Ayes: 9
Nays: 0

General Instructions to Field Employees
Update Required? No

Frequency Manual
Update Required? No

Standard Sheets potentially affected:

None

Action: Passed as revised

_x_ RSP Effective: July Letting
___ RPD Effective: _____ Letting
_x_ 2010 Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Received FHWA Approval? Yes

Item No. 08-7-10
Mr. Keefer
Date: 02/21/08

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 715, BEGIN LINE 489, DELETE AS FOLLOWS:

~~Tee, stub tee, and wye connections will be paid for by means of the allowance of 5 lft (1.5 m) of the smaller diameter pipe. Elbow connections will be paid for by means of the allowance of 2 lft (0.6 m) of pipe of the same diameter as the elbow. Increaser and reducer sections will be paid for at the contract unit price for the larger diameter pipe.~~

COMMITTEE COMMENTS ON THIS ITEM:

This agenda item was developed by the committee during the meeting.

Other sections containing specific cross references:

205.07 Pg 168
717.09 Pg 566
718.10 Pg 570
719.08 Pg 573

Recurring Special Provisions potentially affected:

None

Motion: Mr. Keefer
Second: Mr. Andrewski
Ayes: 9
Nays: 0

General Instructions to Field Employees
Update Required? No

Frequency Manual
Update Required? No

Standard Sheets potentially affected:

None

Action: Passed as developed at meeting

___ RSP Effective: _____ Letting
___ RPD Effective: _____ Letting
_X_ 2010 Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Received FHWA Approval? Yes